THE MEDICAL NEWS AND LIBRARY.

VOL. XXXVI. FEBRUARY, 1878. No. 422.

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GOSSELIN'S CLINICAL LECTURES ON SURGERY . . . . 16 PAGES.

CLINICAL LECTURES.

ON DYSPAREUNIA.

BY T. GAILLARD THOMAS, M.D.,
Professor of Obstetrics and the Diseases of Women and Children in the College of Physicians and Surgeons, New York.

(Reported by P. Brynberg Porter, M.D.)

GENTLEMEN: The case which I bring before you to-day is one of considerable interest in several respects; but there is one special feature about it upon which I should like to dwell at some length a little further on. The patient's name is Mrs. Rose G., aged thirty-eight years. She is a native of Ireland, has been married fourteen years, and has had five children and one miscarriage. Her youngest child is two years old, and the miscarriage, which was at the third month, occurred two months ago. Though never very robust, she tells us that the trouble of which she now complains has been experienced only since July last (four months). She suffers continually from a fixed pain seated in the right iliac fossa, and not infrequently extending down the lower extremity of that side as far as the toes, and chiefly affecting the great toe. It always runs down the anterior and inner aspect of the limb, and never the posterior part as well. At the time of the menstrual periods this pain becomes very greatly increased, and extends around to the back, which is never the case at any other time. At the last two menstrual

Published Monthly by HENRY C. LEA, Nos. 706 & 708 Sansom Street, Philadelphia, *for One Dollar a year; also, furnished* GRATUITOUSLY *to all subscribers of the "American Journal of the Medical Sciences," who remit the Annual Subscription, Five Dollars, in advance, in which case both periodicals are sent by mail free of postage.*

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epochs it has been so severe as to confine her to bed, and cause her the most intense suffering. It becomes severe, she says, about two days before the catamenia make their appearance; but when the flow begins, it again diminishes. From the history to which you have just listened, my suspicions were at once excited in regard to one organ, and that was the right ovary. But why not the uterus or left ovary? Because of the seat and peculiar character of the pain, which, you will remember, is fixed at all times in the right iliac fossa, is excessively aggravated and extends around to the back, at the menstrual epochs (and at this time only), by reflex action runs down the inner side of the leg to the great toe, becomes increased two days before the appearance of the menstrual flow, and, lastly, is relieved when the flow begins. These are the peculiarities of ovarian pain, and whenever they are noticed you should always suspect one, or perhaps both, of these organs. Putting a few direct questions to the patient, we find that she suffers constantly from leucorrhœa, but has no irritability of the bladder or rectum; and that the pain of which she complains has been much worse during the last two months (or, in other words, since her miscarriage) than it was before.

In the physical examination, with the patient lying on her back, the first thing that I noticed when I passed my finger into the vagina was, that the os uteri was not in its normal position, but considerably higher up than it ought to have been; and I also found that the cervix was lacerated to a certain extent. Carrying the finger back of the cervix, I felt a soft mass apparently connected with it, which I suspected to be the body of the uterus; and on conjoined manipulation, which was made without any difficulty, after a few forced expirations, on account of the laxness of the abdominal walls, I ascertained with certainty that the uterus was enlarged, retroverted, and tender on pressure. But this was not all that I discovered; for, upon pressing over the right broad ligament with the hand that was upon the abdomen, I detected a pulpy mass of the size of an English walnut lying back of the uterus in Douglas's cul-de-sac, and so exquisitely sensitive that the patient cried out with pain the moment that I touched it. Now I was fully prepared to find such a body in this position, and would have been much disappointed if I had not, because the history pointed so evidently to chronic ovaritis of the right side. It might, perhaps, be supposed that the body which I felt was either a fibroid or a small phlegmon; but fibroids are not sensitive, and cannot be pushed away from the uterus, as I found it possible to do with this mass, and though phlegmons are tender on pressure, its mobility also showed that it could not be one of these. Furthermore, the great nervousness of the patient was an additional reason for supposing it to be an ovary.

The patient was now placed upon the side, and a Sims speculum introduced, when the ovary was pushed completely up out of reach. In order to confirm the diagnosis of retroversion, the uterine probe was passed to the fundus (which did not occasion the patient the slightest inconvenience), and it was found to take a downward and backward direction. Here, then, was a case of laceration of the cervix, hyperplasia, and retroversion of the uterus (the latter being probably caused by the former), and of chronic ovaritis. The patient is at a loss to account for the miscarriage from which she suffered two months ago, but it was no doubt due to one or more of the above abnormal conditions.

But there is one other symptom of the case of which I have not as yet spoken, but which is a very prominent one, and one to which I now desire to call your particular attention, and that is *dyspareunia*. I have already had occasion to allude to it in connection with the first case presented to you at the clinic this session; but to-day I propose to examine a little more fully into its causes and treatment. I accept the term, which means difficult or painful coitus, from Dr. Barnes. It is derived from the Greek word δυσπάρευνος,[1] signifying *ill-mated*. The only

[1] This is composed of the words δυς and παράευνος, the latter being made up of παρα and ἔυνη (the marriage bed).

way to treat this symptom is to find out all that you possibly can about the cause, and then remove that if it is practicable. Now how shall we approach it in the case before us? When the finger is passed into the vagina, three tender points are detected by it. The first met with is the cervix, at the part where it has been lacerated, for this accident has produced a neuralgic condition here. The second is the congested and displaced uterus, and this may, perhaps, have something to do with its causation; but neither of these conditions, as I would have you particularly note, is often concerned in the production of dyspareunia. Thirdly, we have an inflamed and exquisitely sensitive ovary, and that, you will find, is one of the commonest of its causes. The pain on pressure, too, is far more acute than at either of the other points just spoken of. You remember the aphorism of Hippocrates, *Propter uterum mulier est;* Prof. Peaslee in his work has rendered it more strictly correct by substituting the word *ovaria* for *uterum*. The ovary may be not inappropriately termed the pendulum of the female clock; and I have not the slightest doubt that this woman could be easily thrown into an hysterical condition by a little continued pressure on the diseased organ.

These cases of dyspareunia are often exceedingly troublesome, and they will tax your ingenuity to the utmost when you get into practice. It is a most prolific cause of domestic infelicity, for the husband is made unhappy, and the wife is not only rendered mentally miserable, but suffers from the most profound derangement of her nervous system. The causes of dyspareunia are numerous, but I will endeavour to enumerate all that you will be at all likely to meet with. You will be pretty certain to find one or more of these conditions present in every case of the affection in which you are consulted, and if you will bear them in mind, you will be surprised to see how often you can remedy the trouble, and how much real happiness you will thus have the means of conferring. You all know how much a man is physically disordered when he is unhappy; a woman's disorder is always tenfold greater from the same cause. The first cause that I will mention is—

Hyperæsthesia of the Hymen and Ostium Vaginæ.—If you will recall the case of vaginismus which I showed you about a month ago, and the extreme suffering which the mere attempt to introduce the finger within the vulva occasioned the patient, you can readily appreciate why this should be a very prominent cause of dyspareunia. But it sometimes happens that after this condition has been removed, the symptom still persists, because there has been some other cause present as well.

(2) *Diseased conditions of the Os and Cervix Uteri.*—Lacerations sometimes produce it, as we have seen, and it is also occasioned by hyperplasia of the cervix resulting from chronic inflammation of its lining membrane, which affects the nerves supplying the parenchyma.

(3) *Stricture of the Vagina.*—This is sometimes congenital and sometimes the result of the exanthemata or of continued fevers, like typhoid and typhus, occurring during childhood. I have seen one case in which it followed measles. Sloughing of the vagina was a concomitant or sequel of the disease, and a stricture was its result. Such strictures often escape notice entirely until after marriage, for they do not amount to complete atresia of the vagina; but while they permit a free passage of the menstrual blood they present an effectual barrier to sexual intercourse.

(4) *Pelvic Cellulitis and Peritonitis.*—These are two of the most irremediable causes that you will meet with. As a result of the inflammatory process, the whole pelvic roof becomes, as Dougherty expresses it, as hard as a deal board, and often extremely sensitive to the slightest pressure upon it.

(5) *Uterine Displacements.*—The dislocated organ is in a neuralgic condition, because there is marked derangement of its innervation and circulation. Unlike the last, this condition is one of the most curable of the causes of dyspareunia.

(6) *Coccyodynia.*—The attention of the profession was first prominently directed to this affection by Sir James Y. Simpson,

but it was really observed before this by the late Dr. Nott of this city. There are two forms of it, one purely neuralgic in character, and the other an actual disease of the bone (caries), and the latter is much the more severe. There is sometimes a most violent pain during defecation from it, and sometimes a continued neuralgic condition of the coccygeal nerves.

(7) *Fissure of the Anus*, and

(8) *Irritable Urethral Caruncle.*—The latter is a little proliferation of the structures of the mucous membrane at the meatus urinarius, usually about the size of a small strawberry, and having loops of nerves running down into it, which render it excessively painful during micturition and coition.

(9) *Chronic Cystitis.*—This is quite a common affection among females, though it is, perhaps, a somewhat rare cause of dyspareunia. But sometimes the inflamed viscus is acutely sensitive, and the irritability which characterizes it is communicated to the adjacent parts.

(10) *Short Vagina.*—This is another cause which is congenital, and which remains unaltered through life. The uterus remains in a constant state of irritation from coitus (which occasions the patient very great suffering), and continually pours forth a glairy discharge of mucus. The greatest unhappiness to both man and wife frequently results, and to illustrate this I will relate a case which came under my notice some time ago. The husband was a vigorous man of powerful physique, and, though very wealthy, of not much refinement. His wife, unfortunately, suffered from the trouble which we are now discussing, and in consequence he became exceedingly morose, and at length left her altogether. He then got into bad habits, and about a year ago committed suicide; this melancholy result being attributable, as I believe, to the condition spoken of. Of course, I may be mistaken in my explanation of the case, but from the circumstances I can hardly doubt that it is the true one. Before leaving it, I may say that, owing to the constant discharge from the cervix, the patient was never pregnant.

(11) *Disproportion.*—As we read in the Scriptures that "there were giants in those days," so there are now. To no class of cases can the original signification of the word dyspareunia, "ill-mated," be more appropriately applied. This is one of the causes which, as you may readily imagine, is the most irremediable, and this unfortunate abnormal development on the part of the male often occasions the greatest amount of distress. Lastly, we come to the cause which is no doubt the true one in the case before us, and which I have left to the last not because it is an unimportant one, but simply for the reason that it exists in our patient, viz.:—

(12) *Chronic Ovaritis.*

There are two other conditions which occasionally produce dyspareunia, but I would not rank them with those already given, because when present they are accompanied by other symptoms which are much more prominent than this. They are—

(13) *Malignant Disease of the Cervix.*—And—

(14) *Fibroids situated near the Cervix.*—These are ordinarily not at all sensitive; but if they take on an inflammatory process, as is occasionally the case, they become so.

I now propose to speak of the removal of some of these causes. The first step towards this in any given case is, of course, to ascertain what is the true cause of the dyspareunia. Have we done so in the present instance? I think so, but am not positively sure in regard to it. I think it probable that if the inflamed ovary could be kept up in its proper position in the pelvis, where it would be out of reach of the irritation produced by coitus, and its present diseased condition be somewhat ameliorated, the dyspareunia would entirely disappear. But, as we have seen, there are other conditions present here which may possibly give rise to the symptom. How shall we then decide? Well, we may regard the matter as pretty certainly determined by the fact that the ovary presents the point of maximum tenderness, the sensitiveness of the other two points before mentioned

being insignificant compared with it. If the first cause upon the list, viz., hyperæsthesia of the hymen and ostium vaginæ, were present, the mere attempt to separate the labia would occasion the patient an extreme amount of suffering, and produce a high state of nervous excitement. I have so recently spoken of the treatment in this condition that it will be unnecessary for me to go into the subject now. If there is some diseased condition of the cervix, like the laceration in the present case, a careful digital and specular examination will reveal all that is requisite to enable us to relieve it. If there is a stricture of the vagina, or an abnormally short vagina, the mere passage of the finger will be sufficient to detect the condition, though unless the greatest care is observed we may be deceived as to the fact of a vagina being really too short. If dyspareunia is the result of pelvic cellulitis and peritonitis, we would find great tenderness existing all over the hypogastrium, when conjoined manipulation is attempted, and about the roof of the pelvis. We may also find hard masses of exudation or collections of pus, which have resulted from the inflammatory affection.

Some of the other conditions mentioned must be looked for very carefully, or we shall fail to discover them. It is astonishing how frequently patients, in describing their symptoms, will entirely omit to mention the most important of all. A woman, for instance, will come to you with a vague account of some dyspeptic derangement, and never say a word about the pint of blood which she may have vomited a day or two previously. I once knew of a sailor on a man-of-war who, while under treatment for fracture of the thigh by the young assistant surgeon of the ship, was visited by the fleet-surgeon in his rounds, and described to him a long train of symptoms, but neglected altogether to mention the broken leg. Intense agony during defecation is the most prominent symptom of fissure of the anus, and yet those who suffer from it will sometimes not mention it, because females, as a rule, dislike very much to speak of this condition. You know how much suffering a little crack at the corner of the mouth will occasion in cold weather, giving rise to some neuralgic pain which extends as far up as the eye. The pain from fissure of the anus is of the same character, but infinitely more intense, and during the act of coition affects the nerves of all the surrounding tissues. Pain is thus transmitted all over the vagina, and the same is true in regard to coccyodynia. We must be very careful not to overlook a sensitive urethral caruncle. It is apt to give rise to great irritability of the bladder; but irritability of this viscus is so frequent an occurrence in females that they seem sometimes to regard it as really a natural condition, and will not remember to mention it. So chronic cystitis not infrequently entirely escapes notice, and though it is often a very intractable affection, it is frequently amenable to treatment by means of free dilatation of the urethra, which enables us to keep the bladder thoroughly washed out by the use of appropriate injections. As I have previously indicated, nothing can be done where there is a congenitally short vagina, or when disproportion is found to exist.

But chronic ovaritis especially concerns us to-day, and I am confident that we can do a great deal of good in the way of treatment in this particular instance. We shall utterly fail in all our attempts to give relief here, however, unless we can raise the ovary out of its present position and keep it so elevated. It was demonstrated that it could easily be forced up out of Douglas's cul-de-sac when the speculum was introduced, and I would now recommend that it should be retained in its natural situation by some appropriate form of pessary. The shape and size of the vagina vary so greatly in different individuals, that in any case whatever in which a pessary is to be worn, it is absolutely essential that only one especially adapted to it in every way should be inserted. There is too much indiscriminate use of pessaries at the present day, and this I believe to be one great reason why they so often do harm, and why they have gotten into such bad repute in certain quarters. In the present instance I might,

perhaps, at first make use of the simple elastic rubber ring, known as Meigs's pessary; and finding that this did not accomplish the result designed, I might employ Hodge's or Albert Smith's modification of that; or, more probably, I might resort to a modification of Cutter's very excellent pessary, which is retained in position by an elastic band attached to an abdominal belt, and whose essential feature is a hard-rubber bulb which fills up all the post-uterine space, and would thus effectually keep the ovary up out of Douglas's cul-de-sac.

Further than this, the patient should be instructed to remain very quiet at the time when physiological congestion of the ovary occurs. For several days before each menstrual period she should lie in bed, while the bowels should be kept relaxed and every possible source of irritation removed. When the flow makes its appearance she should be allowed to get up again, for she is to be treated not for disordered menstruation but disordered ovulation. There is one remedy which seems often to have a favorable influence in these cases by allaying nervous excitability, and that is bromide of ammonium. I am in the habit of giving it in from ten to fifteen-grain doses, combined with some bitter tonic, three times a day for four or five days at the menstrual epoch; always taking care to antedate somewhat the period of ovulation.

Lastly, galvanism should be given an extended trial here; the constant current ought always to be used in such cases. I would recommend that about twice a week one sponge electrode, mounted on a long handle, should be applied directly to the ovary, or as near to it as you can get in the vagina; and that the other, a broad, flat one, should be applied successively for a few minutes to the abdomen, and the spine, near the dorsal vertebræ. I have been told by specialists in electro-therapeutics, that this is a very uncertain method of reaching the ovary with the galvanic current; but as they have been unable to suggest any better way, I still continue to employ it.

On Horsehair as a Drain for Wounds — Prof. Lister, in the course of a clinical lecture on a case of excision of the knee-joint (*Lancet*, Jan. 5, 1878), called special attention to the manner in which drainage was provided. He said: Next to the importance of the avoidance of putrefaction in wounds is the prevention of tension by providing a free escape for effused blood and serum. This we have hitherto generally done by means of the caoutchouc drainage-tube of Chassaignac. But in the present case such a tube would have been unsuitable, because the natural position for the drain was that it should run between the ends of the bones which, as we have seen, were pressed together, so that the calibre of a caoutchouc tube would have been altogether obliterated, and the drain in a most important part of its course rendered useless. Under these circumstances I used a drain of horsehair, because such a drain operates by capillary attraction through the interstices between the hairs, and those interstices cannot be obliterated by pressure, seeing that the hairs are not individually compressible.

The drain was introduced in a manner which you will often find useful. It may frequently happen that the most dependent part of a wound may have no opening in the skin to correspond with it; thus after excision of the mamma it may turn out, when the operation is concluded, that the wound presents a pocket extending considerably further back than the outer angle of your incision. Under such circumstances it is desirable to make an opening for the exit of the drain at the most dependent part. Now, if this were done by a puncture with the knife, some arterial branch of considerable size might be wounded, involving the necessity of freely enlarging the wound to secure the bleeding point. But if you take a pair of dressing forceps, and bore steadily from within outwards, the conical extremity of the instrument will slip past any arterial branch or nervous trunk without injuring it, and when at length it is apparent that there is nothing

but skin between the instrument and the surface, the tough integument is divided with a knife over the point of the forceps, and the blades being forcibly expanded so as to enlarge somewhat by laceration the opening which has been made in the muscles, or other deeper textures, the drain is seized between the blades of the forceps, and drawn into place. So in the present case the most eligible position for a dependent opening was at the outer aspect of the limb, where the use of a knife would have involved the risk of injuring the external popliteal nerve, or of dividing some articular arterial branch. Any such difficulty was avoided by employing the dressing forceps in the manner described.

It is only right that I should mention, when alluding to the horsehair drain, that its use did not originate with myself. We were led to its adoption in the following manner: Mr. Chiene, of Edinburgh, suggested some time ago the employment of catgut as a substitute for the caoutchouc tube. He hoped by this means to provide adequate drainage through capillary attraction, and at the same time, by virtue of the proneness of the catgut to absorption, to do away with the necessity for the withdrawal of the drain from time to time, which there is when the caoutchouc tube is used, whether for the purpose of shortening the tube or substituting a small one for a large. Mr. Chiene's anticipations were to a considerable extent realized. In all cases in which the wound remained aseptic the absorption of the deeper part of the catgut drain, and consequent falling off of the part outside the wound, might be reckoned on as a matter of course; and in several cases in which the catgut was so used, both by Mr. Chiene and afterwards by myself, the drainage proved adequate and satisfactory. Mr. White, of the Nottingham General Infirmary, afterwards substituted horsehair for catgut; not because it was supposed to be superior, but because, whereas the prepared catgut is a somewhat expensive article, a horse's tail is a very cheap one. A notice of this use of horsehair was published by Mr. White's house-surgeon, Dr. L. W. Marshall, in *The Lancet* of Dec. 2d, 1876; and in the following month it was employed by myself, in the Edinburgh Royal Infirmary, in a case of chronic bursitis of the sheaths of the flexor tendons at the wrist, in which it seemed likely to be peculiarly serviceable. In this affection the bursa is distended both above the wrist and in the palm, the cavities thus constituted being connected by a constricted passage under the annular ligament; and it is desirable that both the expanded parts should be opened to give exit to the fibrinous concretions which are generally present (varying in size from that of a millet-seed to that of a small bean), and, further, that drainage should be provided for effused serum, the operation being performed antiseptically, in order to avoid the very serious inflammatory disturbance and suppuration which are otherwise apt to occur. I had previously used the caoutchouc tube as a drain in such a case, but I found a difficulty from the liability of the tube to be compressed by the tendons. This might, I thought, be overcome by the use of the horsehair drain, which at the same time would, for this particular purpose, be superior to one of catgut, because the catgut would probably be absorbed before the necessity for drainage would be over. Accordingly I cut down above the wrist, making my way between the tendons of the flexor sublimis to the distended sheath of the flexor profundis, and, as soon as this was opened, passed in a large bullet-probe, somewhat curved, slipped it along under the annular ligament, and pressed it forcibly towards the palm, so as to perforate the palmar fascia while avoiding injury to the palmar arch, and, having divided the skin over the point of the probe, dilated the opening in the fascia with dressing forceps, and then passed into the eye of the probe a substantial drain of horsehair, which had been well purified by steeping in a 1 to 20 solution of carbolic acid, and withdrew the probe, leaving the horsehair drain in its track. The drain answered admirably, and presented the further great advantage that it could be reduced in bulk in accordance with

the diminution of the serous discharge, by drawing out as many hairs as might be desired; and in the course of three weeks, the last portions of the drain having been withdrawn, the wound healed without the occurrence of suppuration from first to last.

While the horsehair has the advantage over the catgut that it can be used when necessary over a longer period, it has, in some cases, the converse superiority that it can be not only reduced in bulk, but withdrawn altogether at an earlier period than is required for the absorption of the catgut; for the catgut, in process of organization and absorption, becomes more or less incorporated with surrounding tissues through the medium of the cells of new formation which invade it, and, if an attempt is made to withdraw the drain in whole or in part, there will often occur inconvenient oozing of blood through the rupture of newly formed vessels. And if, on the other hand, the drain is left intact till the parts of the catgut within the wound are entirely absorbed, there remains a small granulating sore at the place of exit of the drain, which may retard for some days the complete healing of the wound. Further, the threads of the catgut, as they undergo organization, are increased in bulk by the formation of the new cells, and their interstices are liable to be more or less choked, so as to interfere with effective drainage. The horsehairs, on the other hand, lie unchanged among the tissues, and their interstices remain to the last as effective as they were at the outset.

The next case in which I used the horsehair drain was one which you yourselves witnessed—viz., that of transverse fracture of the patella, treated by laying open the joint, drilling the fragments obliquely, and tying them together by means of strong silver wire. Being apprehensive that blood and serum might be effused into the joint to such a degree as to produce inconvenient tension unless a free exit was provided, I resolved to introduce a drain at a dependent part of the articular cavity; but I feared that, if a caoutchouc tube was used, it might be rendered inefficient by being compressed between the condyle of the femur and the neighbouring tissues. I therefore had recourse to the horsehair, introducing into the posterior and outer part of the joint a drain, about a quarter of an inch in thickness, by means of the dressing forceps employed as before described. It worked to admiration; for, though there was, indeed, in the first twenty-four hours, a very copious sanguineo-serous effusion, as shown by the soaking of the antiseptic gauze, yet not the slightest swelling of the joint occurred, and, after nine days, the small remains of the drain, which had been previously reduced at successive periods, were withdrawn, to allow the puncture to close. The drain of horsehair was as pure and white[1] as if it had been merely dipped in water; having been washed quite clean of the blood which first occupied its interstices by the colourless serum which, after the cessation of the original sanguineous effusion, had been the only discharge. I was so much impressed with the satisfactory working of the horsehair drain in that case that we have since employed it in preference to the caoutchouc tube in all our wounds, and have had good reason to be pleased with the change. (If it be necessary to reintroduce a horsehair drain, it is readily done by taking a wisp of hair of half the thickness required, bending it in the middle at a sharp angle over a probe, and tying a piece of carbolized silk round it close to the probe, on withdrawal of which the drain is left with a rounded end which passes readily into the interior of the wound.)

In the case of this little girl the horsehair drain has worked perfectly well in spite of the pressure to which it was subjected. The flow of blood and serum was, in the first twenty-four hours, extremely free, but there was no appear-

[1] I used white horsehair in this case simply because I did not happen to have at hand any of the black, which is generally preferable, because the individual hairs are thicker, while the dark colour has the advantage of making them more conspicuous, especially when they are used for sutures.

has not been prevented, or when there is a concomitant fracture, as in gunshot wounds; 2d. When the patient is scrofulous; 3d. After those dangerous fevers which seem due to an infection, and have more or less analogy with pyæmia, such as puerperal and urinary fevers are sometimes, and such as we see in the course of severe erysipelas and purulent infection, properly so called; and it is because our three patients are in none of these conditions that I am sure they will not have purulent arthritis.

Therapeutical indications.—I have already mentioned these for the first patient, the one with traumatic arthritis due to a penetrating wound. The chief indication was to prevent suppuration. I have told you how it was met.

There remains for him an indication which is the same for the two others—to prevent passage to a chronic state, and termination by an infirmity. For that we recommend, above everything, rest in bed, then compression with the cotton dressing, to be renewed every five or six days. To that we shall add occasional purging. Thus far I see no indication in the sanguinolent or sero sanguinolent effusion. Twice during this year (1872) you have seen me make a puncture and aspiration upon patients, who, after a contusion of the knee, had a considerable effusion of blood. I then gave you my reasons for so doing. I feared that the effusion, on account of its volume, might not be reabsorbed, and that, acting as a foreign body, it might cause permanent irritation and passage to the simple chronic state, or to the form of dry arthritis. I thought that by at once evacuating the liquid, I should remove this cause of prolonged irritation, and put the patients into conditions favouring termination by resolution, rest and compression being also used, as is necessary in all cases of this kind.

In the two patients now before us the effusion is small; it was formed so slowly that I may believe it was composed of as much, and even more, synovia than blood. I count upon the absorption, which is the rule in such cases, and I shall puncture only if, three weeks hence, I find the absorption going on too slowly.

The rupture of the ligaments and the resultant lateral mobility furnish us, in the third patient, the indication to immobilize for a much longer time than in the other two. About two months will be necessary for the consolidation of the ligaments. In order not to condemn the patient to so prolonged a rest in bed, I shall put a dextrine bandage over the cotton dressing at the end of the third week, and leave this immovable apparatus in place for four or five weeks. If, at the end of this time, I still find lateral mobility, I shall renew the apparatus and leave it in place for another month. I do not disguise the fact that this prolonged immobility will favour anchylosis; but that result is far from certain, for anchylosis results from two things: special lesions, which I shall hereafter describe, and immobility. The latter, by itself, would never cause anchylosis. It only favours it by preventing us from employing at a certain moment the movements necessary to prevent its establishment. But, on the one hand, if the lesions which produce the anchylosis are not too marked,

we shall still be able, at the end of three months, to use successfully the movements of which I spoke; and, on the other hand, if permanent anchylosis should occur, such a result would be less unfortunate for the patient than persistency of lateral mobility. For the latter exposes the knee, at every moment, to new sprains and, consequently, to renewed arthrites, which are more troublesome than complete anchylosis.

There will probably be, in all three patients, a final indication, that of favouring the restoration of movements and diminishing prolonged rigidity. But as the means appropriate to that are the same as in cases of spontaneous arthritis, I will speak of them when treating of the latter.

LECTURE XXXV.

ACUTE AND SUBACUTE SPONTANEOUS ARTHRITIS OF THE KNEE.

I. First patient affected with acute arthritis of the right knee, gonorrhœal, with contracture of the flexors—Straightening of the limb under ether—Afterwards, discovery of lateral mobility and crepitation—Explanation of these two symptoms. II. Second patient affected with single acute arthritis, probably rheumatic, of the right knee. III. Formation of a complete anchylosis in both cases, notwithstanding the efforts made to prevent it—Study of the lesions—Congestion—Plastic deposits, whence the name plastic or anchylosing arthritis—Explanation of the anchylosis by the establishment of adherences after a struggle between the tendency towards resolution and the adhesive tendency. IV. Therapeutical indications based upon these ideas.

GENTLEMEN: You have seen for more than six months in ward Ste-Catherine two women who have often given me occasion to speak to you of the acute and subacute forms of spontaneous arthritis of the knee. Both are now getting well with anchylosis. As cases of this kind are not rare, and raise thorny questions of science and practice, I propose to-day to recall the principal details of these two observations and the reflections which they have suggested.

I. *Acute arthritis of the right knee, gonorrhœal, with contracture of the flexors.*—One of them, 25 years old, occupying bed No. 24, ward Sainte-Catherine, was admitted the 29th of December, 1871, into the medical service of my colleague M. Pidoux. She had been taken a few days before with sharp pains in the right knee, accompanied by slight fever and loss of appetite. When she was brought to the hospital, the pains were still very severe; not only was she unable to make any movement, but the knee was flexed to a right angle with the thigh, and she was unable to straighten it, the slightest attempt to do so increasing her pain. At the same time the skin was hot, the pulse at 90, and there was sleeplessness, and very little appetite. In a word,

the intensity of the local inflammatory symptoms and the persistency of this slight febrile condition indicated that the arthritis belonged to the acute form. Furthermore, M. Pidoux had discovered that this arthritis was single, and that the patient had a purulent urethritis and vaginitis which authorized him to consider the disease as of gonorrhœal origin.[1] The 17th of February, that is, more than six weeks afterwards, the general condition had improved, but the local symptoms remained about the same, and M. Pidoux asked me to take the patient into my service. I then found that the knee was flexed at a right angle, in consequence of which the patient was forced to lie upon the corresponding side, that it was swollen and felt very hot to the hand, and that the least pressure, and of course the slightest attempt to move it, caused very severe pains. When I asked the patient to point out the chief seat of these pains, she always indicated the inner side of the knee, the part which corresponds to the passage of the internal saphenous nerve and to the insertions of the internal lateral ligament. On account of the flexed position of the limb, I was not able at first to determine whether there was any effusion of liquid; however, if there was, it was not very abundant, for I did not find any fluctuation.

I further recognized that for the moment the patient had no other joint affected, and that she was without fever. It was then a single arthritis which had at first been acute, and which, in consideration of the disappearance of the febrile phenomena, might be considered as having passed to the subacute state. Was this arthritis to be called rheumatic? Strictly speaking, yes; for by this rather vague word *rheumatism* we wish to designate a general cause, the essence of which is unknown, which affects the synovial, fibrous, and muscular tissues. Furthermore, gonorrhœa also was present, and whatever may be the way in which the production of gonorrhœal arthritis is explained, it is certain that, in its symptoms and consequences, it resembles certain forms of rheumatic arthritis, especially that in which the disease is single, or very marked and prolonged in one articulation, whilst the others are but slightly affected, and in a very temporary manner. Moreover, if any doubts might have existed as to the rheumatic nature of the affection, they would have been destroyed when, a few months later, in June, we saw this patient affected with pains in several other joints, especially those of the shoulders and left elbow. As to the right elbow, it had long been completely anchylosed by fusion in consequence of a traumatic lesion during childhood.

On making my etiological examination I noticed upon the neck the scars of two ganglionary abscesses, and upon the borders of the eyelids a little alopecia and redness coinciding with slight specks left by keratitis during childhood. The patient, although apparently of a good constitution now, had then the scrofulous temperament. The

[1] I agree with those who think that gonorrhœal arthritis is rheumatic. But clinically it deserves mention and a special description for the following reason, which is absolutely inexplicable: it is localized much more frequently than ordinary acute rheumatism in a single articulation, and there goes beyond the congestive form and takes on the plastic and anchylosing form, of which I shall speak in this lecture.

local symptoms do not in any manner authorize me to admit a scrofulous arthritis, but these antecedents might make me fear, in case this acute arthritis should become a chronic one, that it might pass to the fungoid form or white swelling.

However that may be, there was when I first examined this woman one main indication to meet: that of straightening the knee, thus applying the excellent precepts given by Bonnet[1] for the substitution of a good for a bad posture in diseases of the articulations. The patient was then anæsthetized by means of ether, and I straightened the limb very easily by my hands alone, placed it in a wire frame and kept it in place by means of a cushion, an anterior splint, and five straps. Since then the pains have not been so violent. They reappeared however from time to time, especially when the patient moved a little too much, and after we ourselves had made an examination or sought to give motion to the articulation, which we knew to be threatened with anchylosis. At a certain moment during these explorations we discovered lateral mobility, as in the man suffering from a sprain of whom I have previously spoken, and at the same time a loud crepitation which appeared to me to be caused by the friction of the bony surfaces. In a word, after about two months of treatment, the arthritis had passed to the chronic state with the two chief symptoms which I have just mentioned.

To what were these two symptoms due? I again repeat that we do not well understand all the lesions of the beginning of acute and subacute arthritis, because we have not had occasion to study them on the cadaver, and because the only information we possess has been furnished by experiments on animals, and especially by those which Prof. Richet has described in his works on white swelling. Now these experiments probably do not reproduce all the lesions which occur in the living man, and especially those which would explain the symptoms in question. I shall then give you only very probable opinions, warning you that I cannot verify them by direct observation.

As for the abnormal lateral mobility I am disposed to attribute it, like that which I observe after violent sprains, or in patients with white swelling, to a lack of resistance in the lateral ligaments. But I do not disguise from myself that in an articulation where the synovial membrane is thickening and advances, as I shall soon tell you, toward fibrous transformation, it would seem as if the ligaments ought to follow a similar course, and increase their resistance by a thickening and condensation of their tissue. We should then have to admit that here the ligaments have a tendency, in consequence of the arthritis, to lose in part their fibrous character, while the synovial membrane tends to assume this character. It would be strange; but after all it is not impossible.

And it is because it seems to me strange that I offer you another explanation; perhaps the lateral mobility is caused by the semilunar

[1] Bonnet, Traité des Maladies des Articulations; Lyon, 1845. Thérapeutique des Maladies articulares; Paris, 1853.

fibro-cartilages being softened, thinned, and about to disappear. For I can understand that if these intermediate bodies were lacking, the two bones would approach one another, the ligaments would slacken and lose the tension which, during extension of the limb, was the principal obstacle to lateral mobility. What authorizes me to offer you this supposition is the fact, that, in all articular diseases which have been a little prolonged, the trouble in nutrition which follows causes, by a mechanism which we do not understand, the destruction of the diarthrodial cartilages. Now as the fibro-cartilages have a similar structure, I presume that, as moreover we see it in white swelling, their cells open, are destroyed, and disappear, and that as the cartilaginous portion is disassociated and absorbed, the fibrous portion either disappears itself by absorption, or is no longer thick and firm enough to fill the space between the two principal bones of the articulation.

I have now to explain the second symptom, the crepitation. I can attribute it to nothing else than to that destruction of the diarthrodial cartilages of which I have just spoken, a partial destruction undoubtedly, but nevertheless occupying the whole thickness in certain points, and thus permitting during lateral motion the rubbing of the bones which we felt. I repeat that this singular destruction of the diarthrodial cartilages, first noticed in white swelling, then in dry, deforming arthritis, seems to occur in almost all arthrites when they have a certain intensity or last for a long time.

I omit, for the moment, the later phenomena which we observed and the present condition of the patient, for, in these respects, she resembles another woman, No. 3, whose antecedents I will now recall, and will then complete the account of the two observations.

II. This second patient, No. 3, is 23 years old, and, like the preceding one, has had no children; she knows no cause to which to attribute the very painful affection of the knee from which she was suffering when admitted to the hospital the 3d of April, 1872. The disease then had lasted a week, and was accompanied by a slight febrile movement. The local symptoms were a notable swelling, a small effusion within the joint, considerable heat felt by the hand, very sharp pain on the slightest movement, and much spontaneous pain during the day and especially during the night. In a word, the general and local symptoms were those of moderate acute arthritis. In her case there was neither the permanent flexion nor the lateral motion which we found in the other. We have treated this woman by immobility in a wire splint, several applications of wet cups, several blisters, purges, opiates, and sometimes, when the pains were very severe, by the subcutaneous injections of the hydrochlorate of morphine. You have noticed frequent renewals of pain and even of fever, which made me fear suppuration; but this has not occurred, and after several weeks all these symptoms were so much better that I have no longer had this fear, and have considered the disease as having passed to the chronic state.

III. Since about the 15th of June the two cases have been so similar that I can complete their history at the same time. Finding myself in presence of a disease which had kept the articulation immovable

and threatened to end by anchylosis, I tried to prevent this result and obtain a cure with preservation of the functions. With this object I communicated a few movements to the limb every morning, and advised the patients to do the same. The manœuvre was repeated in the evening by the interne of the service. But see what happened: notwithstanding all their efforts, the patients were not able to bend the knee; their muscles did not contract, and the only movements which took place were in the hip and thigh. As for those which we communicated during about a minute each time, they were very limited and caused pain which lasted for quite a long time thereafter. At the end of a week these pains increased, so that it became necessary to stop all motion and return to poultices. A few days later we recommenced, with the same result. I therefore had to give up my attempts and let the articulations rest.

To-day, the end of July, in both patients the patella is united to the femur; the first (No. 24) has lost all movement of the tibia upon the femur; the second (No. 3) has still a few movements, but they are very limited, and I expect to see them disappear entirely. In both of them we shall have subacute arthritis terminating, after passage to the chronic condition, in complete anchylosis. I have shown you, in addition, that since the beginning of the disease the femur has seemed to be tumefied to a great distance above the articulation. To-day, when I compare it with that of the opposite side, I find a swelling similar to that which we have often seen after simple and compound fractures, and after epiphysary osteitis, a swelling which we call hyperostosis.

Let us now see, gentlemen, 1st, what have been the anatomical lesions in these two women; 2d, why, in spite of all our efforts, the cure did not take place with preservation of shape and functions.

1st. As for the lesions, it is certain that in the synovial membrane they consisted of a hyperæmia and inflammatory exudations, some of them deposited in the membrane itself and making it rigid, others on its inner surface in the form of fibrinous and neo-membranous flakes, which became vascular and were transformed into a fibro-cellular or fibrous tissue. It is for the sake of better characterizing this capital lesion and to distinguish it from those of fungoid and dry arthrites that you have often heard me employ the expression *plastic arthritis*.

While these lesions are being produced in the synovial membrane, what is taking place in the other constituent parts of the articulation? That is what autopsies have not yet well cleared up. I presume, as I have already said, that the diarthrodial and inter-articular cartilages are disorganized and thinned, and perhaps have disappeared. It is more than a presumption in the case of the first patient; for we have not been able to otherwise explain the crepitation which we found in her at a certain time. But is this lesion entirely similar to that which we find in white swelling and dry arthritis, or is it different? Do Brodie's ulcerations and Redfern's velvety change occur here?

Or is it by the histological lesions, the knowledge of which we owe to M. Ranvier, especially by the proliferation of the superficial cells, the segmentation of the fundamental substance, and the opening of the

capsules into the articular cavity, that the supposed destructions commenced? I cannot answer these questions, because the authors I mention have not made a sufficient number of autopsies to be able to say whether the lesions which they describe in dry arthritis are also found in anchylosing plastic arthritis, or at what period of the disease they appear.

So also for the ligaments; are they softened and destroyed, as we might have supposed, in the first patient who has had lateral mobility from the beginning? Are they not, on the contrary, thickened and rigid, in consequence of their participation in the plastic phlegmasia? On this point also I am in doubt.

And the bones? I have noticed nothing in the patella or the tibia, but I told you that the femur seemed notably hyperostosed in both patients. Is it the periosteum alone which has been invaded by propinquity, and which has furnished new layers of bone by a periostitis, likewise plastic? Or has the entire thickness of the bone been affected, passing to the condition of plastic or condensing osteitis? I do not know. But on this subject I offer you a final reflection which has already been mentioned *àpropos* of osteitis. I have often seen hyperostosis follow traumatic and spontaneous arthrites when they had not taken on the fungoid character and the tendency to chronic suppuration, or, which amounts to the same thing, when the patients were not scrofulous. I therefore believe that in cases where we have doubts as to the nature and the tendencies of an arthritis, the certain appearance of hypertrophying osteitis is an argument in favour of the opinion that this arthritis is plastic rather than fungoid and suppurating.

2d. How and why was this complete anchylosis established? Two chief incontestable reasons explain this termination: First, the false membranes formed adhesions like those we find on serous membranes after inflammation; these adhesions, becoming more and more firm and rigid, have diminished little by little the synovial cavity and opposed change in the position of the articular surfaces. Secondly, prolonged immobility has favoured these adhesions. This immobility itself was due both to the pain which permitted neither voluntary nor communicated movements, and to the muscular insufficiency which was itself the consequence of these pains. For there are produced during the course of painful arthrites remarkable physiological and anatomical modifications of the muscles. They cease to contract voluntarily, and assume a prolonged contracture which completes the immobility in the position either of flexion or of extension. You remember that in one of our patients we had to straighten the knee after having overcome the resistance of the contractured flexors by anæsthesia. When the first effect, contracture, has lasted a certain length of time the peri-articular muscles atrophy, then pass to the fibrous and fatty condition which characterizes retraction. The longer these lesions of the muscles last, the more do they favour the establishment of the anchylosis by allowing the formation and organization of the adherences of which I have just spoken.

It is now the moment, gentlemen, to define our opinions upon the

influence of immobility in the production of anchylosis. It does not by itself produce it, only when combined with a plastic arthritis. But it may happen that this latter is caused by the immobility itself. Recall in this connection the distinction which I have often made between large and small articulations, at least so far as traumatic articular diseases are concerned. Immobility alone rarely causes plastic arthritis in the large joints, and if the latter occurs it is due to external violence. The contrary is the case in the small articulations. Immobility alone may there cause plastic arthritis and consecutive anchylosis.

These results do not seem to me to agree with M. Charcot's. In his recent works this author has described an arthritis of the large articulations in paralytics; but the immobility does not seem to me, in such cases, to be the sole cause of the articular phlegmasia. The troubles of the nervous system undoubtedly contribute to a certain extent, and the conditions are not the same as those of immobility after great traumatisms.

But let us return to the mode of production of the anchylosis of the knee in our patients. Is there no reason to lay it to the charge of other causes than those of which I have just spoken? I think there is, but I am not sufficiently acquainted with all the alterations that have occurred, to affirm it. It may be, for example, that the diarthrodial and semilunar cartilages having been completely absorbed, the surfaces of bone thus laid bare and attacked by plastic osteitis have united by a mechanism analogous to that of the formation of a callus. There would then be established an anchylosis by fusion of the bones. It may also be that the cartilages not having been absorbed, fusion has taken place between them, and that thus the anchylosis may be by cartilaginous fusion, a form which is much rarer, but which has been observed, and of which I have seen an example. Or it may be that the cartilages having been preserved, false membranes have formed upon the opposing surfaces, and that solid adhesions have taken place between them. The anchylosis would then be called fibrous.

We are unable to recognize clinically in the living patient with which of these forms indicated by pathological anatomy we have to deal. This would be a source of regret if therapeutics could do anything for complete anchylosis, that in which all movement has disappeared. But I am of those who believe that in such cases nothing should be done. The indication, either to oppose anchylosis itself, or to substitute a good for a bad posture, exists only in those cases in which some movements remain and the anchylosis is incomplete. Now, anchylosis may be incomplete in two ways: first, by the thickening and lack of extensibility of the synovial membrane, consecutive to the cellulo-fibrous, and even fibrous transformation of the plastic materials deposited in it, it is then incomplete anchylosis by rigidity; second, by the establishment of adhesions which are still extensible and susceptible of resolution between the opposite points of the synovial membrane, in which case the anchylosis is called cellular or adhesive. You understand, finally, that the incomplete anchylosis may be at the same time adhesive and by rigidity.

I now reach the second question, a very interesting one clinically, that of knowing why complete anchyloses are produced. It is first because the arthritis has passed beyond the limits of that which is simply congestive, as happens quite often in the traumatic variety following contusions and sprains, and because by passing these limits it becomes plastic and adhesive. But all plastic arthrites do not end in complete anchylosis: a goodly number end in the rigidity and cellular adhesions of which I have just spoken, and which we finally overcome. What takes place in such cases? The congestion disappears, the inflammatory products infiltrated in the thickness of the synovial membrane, and which have given it its rigidity during a certain time, do not go very far in their fibrous transformation, and may be reabsorbed; the false membranes, if there have been any, are also reabsorbed; the synovial membrane again becomes supple, and the articulation returns to its normal condition.

In our two patients the plastic products, instead of being reabsorbed, have advanced further and further in their organization, have made the synovial membrane fibrous, and have formed adhesions, while at the same time, in all probability, the cartilages and the ligaments have undergone the alterations we have mentioned. The capital difference then is this: the plastic arthritis instead of terminating by resolution, has terminated by adhesion, and consequently, by a profound transformation of the normal anatomical conditions.

But in making this explanation I only move the difficulty back. Why, in fact, this unfavourable termination rather than the first? Here I can no longer answer with pathological anatomy, we must turn to pathogeny, that is, to that which is the most obscure and the most difficult, and yet the most real in our science. These women have got their infirmity because they have had a very intense inflammation of a peculiar kind. The intensity has caused the primitive congestion and the consecutive exudations to be more marked than they are in other cases; the nature or the special mode of inflammation has been such that the tendency has been towards organization rather than absorption of the plastic products. Has there been a special cause? It is probable; but we do not know what it is. We say, since we can do no better, that this cause has been rheumatic; we say, for one of the patients at least, that the rheumatism has been gonorrhœal. But since rheumatism produces also arthrites which are simply congestive, or plastic non-anchylosing arthrites, or still others, it remains to know why it has taken the form which we have observed upon our two patients. Probably we must here accuse, as we are so often forced to do, a peculiar aptitude, an idiosyncrasy behind which lies—we should not hide it—our inability to explain the relation between the etiology, the intensity of the lesions, and the tendency of these lesions to advance in one direction rather than in another.

Let us confine ourselves to the deductions which are applicable to the clinic. These deductions are the following: when you have recognized that an arthritis, whether traumatic or spontaneous, is neither suppurating, nor fungoid, nor dropsical, nor dry, do not forget that it is plastic, and that consequently it has a certain tendency towards an-

chylosis, a tendency which you must combat by exciting or favouring resolution, and preventing adhesion.

IV. *Therapeutical indications.*—They result from what precedes, and belong to three periods of the disease. In the first, that of the beginning, the intensity of the phlegmasia must be opposed by rest in a good position, antiphlogistics (leeches, cupping) derivatives upon the intestinal canal, narcotics to quiet pain.

In the second, you must try to provoke and aid the absorption of the plastic products. It is still rest and immobility which meet this indication; revulsives upon the skin, blisters, punctate cauterization may also aid it.

In the third, you must try to make the adhesions, which are still thought to be soft, and the rigidity, which is not yet invincible, yield. It is then that it is proper to try massage and communicated movements. But here we find ourselves between two dangers: that of provoking, by these movements, a return of the phlegmasia, and that, by not employing them, of allowing the anchylosis to form. We are obliged to feel our way. If the manœuvres cause only temporary pain it is proper to persevere; if, on the contrary, they provoke continuous pain, with return of the swelling, of the articular effusion, and of heat to the touch, they must be stopped. Perhaps a little later they may be borne; if they are not it is best to abstain entirely and to abandon the arthritis to the chances of anchylosis, as we have had to do for our two patients. At this same period if the articulation has become indolent enough to allow the patient to leave his bed and walk on crutches, baths and douches of sulphurous or thermal waters, such as those of Néris, Bourbonne, and Plombières, would also be very useful.

LECTURE XXXVI.

CHRONIC ARTHRITES OF THE KNEE.—HYDRARTHROSIS.

Dropsical arthritis or hydrarthrosis—Lesions supposed to exist, but inappreciable by physical signs—Probable congestive form—Enlargement of the patella, explained by a hypertrophying osteitis—Prognosis—Long duration, possible relapse—No tendency to suppuration and to anchylosis—Therapeutical indications: 1st curative treatment: compression, blisters, puncture, actual cautery, injection of iodine; 2d prophylactic treatment.

GENTLEMEN: We have at this moment in the wards several patients suffering from chronic affections of the knee. When passing their beds every morning, I indicate by a word what there is that is characteristic in each one of them, and I recall to you the questions which should always preoccupy us when in presence of affections of this kind: shall we have resolution, anchylosis, suppuration, or the infirmity of

dry arthritis? I cannot speak to you of all these patients: I shall take only the three principal types: hydrarthrosis, white swelling, and dry arthritis. I begin with the hydrarthrosis.

Dropsical arthritis or hydrarthrosis.—The patient in No. 20 is a man thirty years old, jeweller, of a medium constitution, but in whose antecedents we find no indications of scrofula. He told us that on several occasions he had pains in the shoulders, arm, and left knee, which however have never been swollen. These pains, although apparently rheumatic, had not been accompanied by fever nor by such an alteration of health that we could explain them by an acute articular rheumatism.

He entered our wards for the first time three years ago for a swelling in the right knee, the cause of which was unknown. He remained six weeks, and left us almost cured, with a rubber knee-cap, which we advised him to wear during the day and to remove at night. He was able to resume work and continue it until a month ago. However, he has always felt at times, especially when a little fatigued and when the weather was damp, pains in this knee. Finally, a month and a half ago, after a long walk, the pain became more intense, more prolonged, a new swelling appeared, and the patient was obliged to return to us.

He has been here four weeks. You noticed at first that the right knee was swollen, that the depressions on each side of the patella were replaced by a tumefaction appreciable by the eye, that the region was not hot to the hand, and that, by pressing with both hands upon the sides, while the index finger of the right hand pressed back the patella, fluctuation was distinctly felt. There was further the sensation that the liquid was not separated from the skin by a thick layer, and on examining the prolongations of the synovial cavity, especially the upper one, we did not feel any thickening.

The diagnosis was not difficult; first, it was certainly an arthritis, since the swelling, the pain, the difficulty in movement, the heat from time to time could be attributed neither to a simple neuralgia,[1] nor to a cancer, nor to any other disease. But we had next to make the anatomical and the etiological diagnosis of this arthritis.

As to the first, the thing was evident; it was certainly a chronic arthritis, but with considerable effusion, so considerable that it was allowable to make use of it to characterize the disease as our authors have done by employing the word *hydrarthrosis*. You have often heard me pronounce this word for the present patient, and for those who have been similarly affected. But I prefer generally the name *dropsical arthritis* or *arthritis with effusion*, because under this name of hydrarthrosis are comprised two things: an essential effusion or one without lesion, like that which is formed during anasarca, and an

[1] I have often spoken of patients who, with out any anterior disease, or after a traumatic or a rheumatic arthritis, had a very sharp continuous pain in the side of the knee, with exacerbation during walking or without known cause, and without any appreciable swelling. The arthritis had no lesion, or only a congestion inappreciable by our senses; but it was more painful than this simple lesion would have made one suppose. I call it neuralgic arthritis or exaggerated sensibility of the knee.

effusion symptomatic of an inflammatory condition. Now, although we have not often had occasion to make the autopsy of patients dead with hydrarthrosis, yet, in the rare cases where this occasion has been presented, an injection of the synovial membrane has been found, representing Bonnet's congestive form, of which I have already spoken, with a very slight thickening; and as in the other side, the clinic teaches us that most patients affected with effusion in a single knee have at the same time some functional symptoms which can be explained by inflammation, I prefer to make use of the word arthritis, which indicates that in my opinion it is an inflammatory disease.

I sought, in our patient, if there was at the outer and upper part of the articulation one of those indurated nodules which Marjolin and Malgaigne pointed out as sometimes accompanying hydrarthrosis, which may be attributed to a partial thickening of the synovial membrane. But I did not find these nodules, although I have found them upon other subjects.

I have just touched upon another point of the anatomical diagnosis. What are the lesions of this arthritis with effusion? I assure you that the clinic has given no physical sign which could indicate any. If these lesions exist, and I do not doubt it, they ought to be in the synovial membrane, for that is the only way of understanding the effusion. But it does not seem to be thickened, neither as it is in plastic arthritis, nor as it is in fungoid arthritis. I do not deny a slight augmentation of volume like that which sometimes accompanies congestion. I am disposed especially to admit this augmentation in the synovial fringes corresponding to the intercondyloid space; but the lesion is not sufficiently marked to be felt through the skin. I believe much more in the existence of injection or hyperæmia like that which was found in the autopsies of Dupuytren and others, and I believe it, not because it is proved to me by physical signs, but because the effusion and the functional symptoms are those of an arthritis, and because I do not know any other lesion than congestion or hyperæmia which could explain them.

But what must we think of the other constituent parts of the articulation? I admit that I fear some nutritive trouble in the cartilages; for there is such a solidarity between them and the synovial membrane, that they end habitually by becoming altered when the other has been diseased for some time. Still, there is as yet no physical sign which authorizes me to affirm the existence of a lesion in that quarter. The same is true of the ligaments; if they were softened, and they sometimes are in hydrarthrosis either by excessive distension, or, which seems to me more common, by a concomitant trouble of nutrition, we should have lateral mobility; but I satisfied myself that it did not exist. Moreover, they are not rigid, for all communicated movements are executed almost as they are normally. Voluntary movements also take place, but they are limited by the pain and not by an appreciable material modification of the means of union.

As to the bones, I have noticed nothing in the femur and tibia; the first, in particular, has not shown that hyperostosic swelling with which we were struck in certain plastic arthrites (see p. 295). I

point out to you only a very marked transverse enlargement of the patella. We measured it with a compass, and found it nearly half an inch larger than that of the opposite side. This enlargement of the patella in hydrarthrosis was pointed out long ago; but its origin and its signification were not explained. For me, its origin is still in an hypertrophying osteitis, of the kind of which I have so often spoken to you. Instead of affecting the femur and tibia in a manner appreciable during life, this osteitis is confined to the patella, a peculiarity which is utterly inexplicable. Its signification, however, appears to me to be the same as that of femoral hyperostosis in other arthrites, that is to say, since condensing osteitis appears habitually in patients who are not scrofulous and consequently not predisposed to fungoid and suppurating arthritis, the appearance of hyperostosis of the patella would be a reason to dismiss any fear of the occurrence of the latter, even if some physical signs should have given rise to it.

To recapitulate, gentlemen: in making the diagnosis, *dropsical arthritis*, I presume that we have to deal especially with a rebellious hyperæmia or congestion of the synovial membrane, and if I do not use the expression congestive arthritis, it is because this expression does not sufficiently indicate one of the principal things, the abundance of the liquid. And as congestive arthritis may take place without effusion, and as the latter, when it does exist, has a bearing upon the prognosis and treatment, it is better to use an expression which indicates its presence.

As for the etiological diagnosis, I told you a moment ago that it is a rheumatic disease. At least, we can give no other explanation than that. It is an insoluble problem, that of knowing why this same general cause is marked by effects which are so varied, sometimes a plastic arthritis without much effusion, sometimes a simple congestive arthritis, sometimes a congestive arthritis with effusion, and at other times, as you will see, the dry form. But we have nothing better to substitute for this etiology, and we must keep it because it indicates the use of certain curative and prophylactic measures.

Prognosis.—What preoccupies me above all in this patient, is the probability that his affection will last a long time, and the possibility of a relapse after it has been cured. I have but little fear of its terminating by suppuration, because hydrarthrosis, when not symptomatic of a fungoid synovitis, almost never ends this way. Nor do I fear complete anchylosis, because exudations and false membranes do not exist, or exist in too small quantity to bring about this result. Moreover, even if there were false membranes disposed to form adhesions, the interposed liquid would prevent it. If anchylosis should hereafter occur, it would be incomplete and due to rigidity of the synovial membrane following a slight thickening which may now exist, although the physical signs do not clearly show it. But it is probable that such an anchylosis would be temporary, and that resolution would be obtained. It is possible that, if the disease resists our treatment or reappears a certain number of times, dry arthritis may be substituted for the dropsical one. For it is difficult for the phlegmasia to continue without extending from the synovial membrane to the cartilages.

Alteration of the latter leads sooner or later to their destruction, and when they are once destroyed, if the articulation does not become anchylosed, it is inevitably destined to dry arthritis.

Treatment.—We must distinguish between the curative and the prophylactic treatment.

1st. *Curative treatment.*—Two indications are to be met: to get rid of the synovial congestion, and to get rid of the effusion.

The first needs absolute rest in the horizontal posture; to that we have added since the beginning elastic compression by means of the cotton batting dressing. At the end of a week, not having obtained any diminution, we applied two blisters, and four days later, two others. We interrupted the compression the day the blisters were applied, and renewed it as soon as the epidermis had been opened. Only one purge has been given.

These measures have been sufficient in a certain number of cases, and seemed to act at the same time against the congestion, the starting point of the disease, and against the effusion. The patients were able to leave us at the end of five or six weeks, walking quite freely, and having no longer any swelling or fluctuation. In others we needed from six to eight weeks, at the end of which the cure, although temporary, was obtained. In others again, pain on motion no longer existed at the end of this time; the effusion was diminished, but was still quite large. As confinement to the bed fatigued and weakened the patients, I let them get up and walk with crutches, on the condition of always keeping the cotton dressing applied to the foot, leg, and lower half of the thigh. Sometimes I wrapped a band of vulcanized rubber about the outer bandage so as to insure compression.

In this case, after confinement to the bed for four weeks, blisters, and compression, although the sensibility seemed to be diminished, we still found considerable effusion. It is then one of the cases in which we have to turn to the second indication, address ourselves to the effusion itself. I met this indication this morning at the bedside of the patient. I punctured with a very fine trocar and withdrew the liquid by means of an aspirating syringe, making it flow into a vessel in which a vacuum had been made before the faucet communicating with the canula of the trocar had been opened. You saw that the liquid escaped very freely, and that I avoided making any pressure upon the joint under the pretext of favouring the flow. The evacuation ended, I took care to close the small opening with collodion and to replace the cotton bandage. There were about five ounces of liquid. It was sticky, yellowish, and although it did not offer the troubled or gray tint which indicates the admixture of a certain quantity of pus, yet we found a few leucocytes in it. Still I am not disturbed by this fact, because normal synovia always contains a certain number of these elements, and their augmentation after a slight inflammation by no means indicates a tendency to suppuration, as we understand it in surgery.

But after this puncture, and if we continue the compression, will the patient get well? That depends upon the cause, doubtful for me, of the effusion. There is no doubt but that its starting point was an

excess of secretion. It then continued because absorption was insufficient. If now the synovial membrane is so happily modified that equilibrium may be re-established between the secretory and absorbing functions, the puncture will succeed. But if it remains vascularized, its secretory function exaggerated, and its absorbing power diminished, the liquid will be reproduced and not absorbed. It is because no symptom can enlighten me on this point that I cannot determine the consequences of our operation.

If the same quantity of liquid is reproduced, what shall we do? Until recently, we rarely punctured the joints, because we feared consecutive suppuration. But now the facts published by M. Dieulafoy, and those that I have myself observed, authorize us to believe that capillary puncture with aspiration does not expose to this danger. Therefore I should be willing to make a second and even a third puncture if, after two new blisters and the continuation of the compression bandage, the liquid was not reabsorbed.

Perhaps also in this case I shall have recourse to actual cautery. Some surgeons claim to have obtained very good results by this operation, the effect of which is to produce a strong revulsion and cause rigid cicatrices which oppose distension by a new effusion.

If, finally, after five or six months of treatment, I should not have succeeded, which I do not think is very probable, I shall allow the patient to walk while wearing the compressive bandage. Perhaps a little later, and I have seen examples of it, the effusion will end by disappearing and not being reproduced, leaving the articulation its shape and functions.

Perhaps also, the cartilages having disappeared and the synovial membrane having become rigid, the hydrarthrosis may be transformed into an incurable dry arthritis.

If then, after waiting a few months, the effusion persists, or if after having disappeared once or twice it is reproduced; if, above all, I think I see a tendency towards a termination by dry arthritis, I shall propose an injection of iodine, one-third of the tincture of iodine in two-thirds of distilled water. This operation, which was recommended and performed thirty years ago by Velpeau and Bonnet (de Lyon), is now rarely practised. I have employed it only twice. Why this disfavour? Because the injection is followed by a very acute arthritis. In some cases, notably in one of Velpeau's, and in one of Aug. Bérard's of which I was a witness, this arthritis ended in suppuration, purulent infection, and death. In other cases, and this is what happened in my two patients, the arthritis thus provoked remained plastic and ended in complete anchylosis. I believe we cannot count upon a better result, especially upon the substitution for the dropsical arthritis of an arthritis capable of terminating by perfect resolution with preservation of movements, and it is because we cannot count upon this that we should not make haste to advise the injection of iodine. I should however advise it if the relaxation of the ligaments and commencing crepitation made me foresee dry arthritis, for the provocation of an acute arthritis is less to be regretted. I think indeed that with

care, and especially by means of immobility and proper compression, suppuration could probably be prevented.

2d. *Prophylactic treatment.*—If we obtain, as I hope, resolution of the effusion and of the congestive arthritis, there will be two indications to meet. The first is that of combating the rheumatic cause, by advising the patient to occupy a dry room which faces the south; to avoid getting chilled, to wear flannel, and to pass, if possible, one or two seasons at one of the thermal springs which I have already mentioned, in short the advice which we usually give rheumatic patients. The second is that of maintaining constantly, while walking or standing, a certain compression upon the knee by means of a laced dog-skin or canvas knee-cap. These appliances are often troublesome because they are too tight, or useless because not tight enough. Careful and intelligent patients find it better to wear a flannel band two and a half inches wide and about three yards long, which they apply tightly enough to make the necessary compression without being thereby incommoded.

LECTURE XXXVII.

CHRONIC ARTHRITES OF THE KNEE, CONTINUED.—FUNGOID ARTHRITIS OR WHITE SWELLING.

Non-suppurative white swelling of the left knee in a young man 20 years old—Physical and functional symptoms—Muscular atrophy—Absence of hyperostosis—Increase of local heat—Anatomical diagnosis—Undoubted fungoid transformation of the synovial membrane and the ligaments—Presumed lesions of the diarthrodial cartilages and the ligaments—Rarefying osteitis or simple rarefaction, and fatty condition of the cancellous tissue—Etiological diagnosis—Course, termination, and prognosis; tendency to suppuration; very little tendency to anchylosis—Treatment—Indication to favour anchylosis—Cotton batting apparatus, immovable fenestrated apparatus—General treatment.

GENTLEMEN: The patient who was admitted yesterday, No. 4, ward Sainte Vierge, and who resembles two others who have been here for several months, is a young man 20 years old, a shoemaker, who says his left knee has been affected for about a year. As it caused him no pain, and only a little difficulty in moving, he has thus far done nothing for it. But a week ago, after having walked the day before a little more than usual, he suffered pain, was unable to walk, and was obliged to enter the hospital.

You are at first struck with his puny look. He is small, beardless, pale, and with thin muscles. We find the scars of no abscesses on the neck, but he told us that his childhood had been sickly, and that several times his eyes had been inflamed and there had been a discharge from his ears. Although he has had no hæmoptysis he is

ance of the retention of any of it within the wound. On the occasion of the last dressing, two days ago, more than half of the drain was removed. That dressing took place after an interval of three days, and it would be superfluous to change the dressing to-day, were it not that we may, perhaps, be justified, by the further diminution of the discharge, in withdrawing the remainder of the drain entirely so as to permit its track to close.

HOSPITAL NOTES AND GLEANINGS.

Cases of Stricture of the Pylorus treated by withholding Food.—A dock-labourer, aged 41, was admitted to the London Hospital, under the care of Dr. SUTTON, complaining of inability to take solid food, as it always produced great distress; he also complained of heartburn and frequent vomiting. Upon inquiry, it appeared that he had suffered at intervals from severe dyspeptic symptoms during two years, the attacks having become more severe and more frequent of late, so that he was at last unable to take meat or solid food of any kind. He had also often been much distressed by a feeling of tightness across the abdomen, increased by food and relieved only by vomiting, so that he frequently put his finger to the back of his mouth to cause regurgitation. His habits were temperate. Dr. Sutton remarked that the order of symptoms was not indicative of chronic ulcer or of gastric catarrh. The sensation of tightness in the abdomen, the oozing of mucus, and frequent sour rising into the mouth, rather pointed to incipient stricture of the pylorus; and the constant vomiting strengthened that idea, although no distinct thickening could be felt through the abdominal walls. The emaciation might be attributed to the constant vomiting and inability to take food.

While under observation, he frequently vomited yeast-like acid matter containing sarcinæ, which, when kept, rapidly underwent fermentation; he was much troubled by flatulence and headache. Food was given in small quantities, consisting of mince-meat, with very little bread and eggs beaten up with milk arrowroot. The stomach was washed out every day with warm water by means of the œsophageal tube. Under this method of treatment and rest in bed, he improved much in general condition; the vomited matter became less fermentable, and the sarcinæ disappeared.

Relapses, however, occurred, and, at two periods of the treatment, he was fed for three days by nutrient enemata only, no food being taken by the mouth, except a little brandy and water. This plan did not greatly try the patient, and produced a marked relief of the symptoms. The man was under treatment for three months; during that time he improved much in general appearance, and gained seven pounds in weight.

The second case was that of a man aged 55, who, on admission, complained of "windy spasms" and inability to keep down food. He was a blacksmith, and, during adult life, had enjoyed good health, but his habits had not been temperate. He said that, for four or five years before coming to the hospital, he had suffered from distension after food, otherwise his health had not failed till the last three or four months, when vomiting of food became frequent and troublesome. Food caused distress, which was relieved only by vomiting. Formerly, he had been stout, but lately he had become emaciated, and his weight reduced from ten stones to seven stones and a half; his appetite had continued good, but he was afraid to eat. There was neither cough, heartburn, nor jaundice, and, on physical examination, the stomach appeared enlarged, and a distinct thickening was felt in the neighbourhood of the pylorus. It appeared probable that the man was suffering from a slowly growing scirrhous infiltration of the pylorus, causing stricture. Other treatment failing to arrest the vomiting, he was ordered to take no food by the mouth for three days, except a little brandy, and was fed by nutrient enemata. Great relief of the symptoms was thus afforded; the vomiting and feeling of distress subsided, and he was again able to take light food, while the stomach was washed out daily.

He was thus kept in comparative com-

fort, though the disease slowly advanced, and he died three months after his admission to the hospital.—*Brit. Med. Journ.*, Dec. 8, 1877.

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A New Operation for Fracture of the Patella.—In a case of fracture of the patella treated at King's College Hospital, Mr. LISTER cut down on the fragment, opening the knee-joint, cleansed the surfaces of the fragments, and, having established an independent drain of horsehair for the knee-joint, drilled the two portions of the patella and tied the fragments together with silver wire, and then closed the wound, which was also also drained with horsehair.

This operation was performed six weeks ago; the wound, as exposed to-day, was seen to be completely healed, the ends of the silver wire projecting through the scar. The highest temperature that had occurred was 100 deg. Fahr. on the morning after the operation. There has been no disturbance, constitutional or local, and both the wounds healed in about a fortnight.

The limb will be kept at rest for another fortnight, when, if union have taken place, the wires will be withdrawn.—*Brit. Med. Journ.*, Dec. 15, 1877.

MEDICAL NEWS.

DOMESTIC INTELIGENCE.

Rectal Alimentation.—In some recent remarks on this subject (*Med. Record*, Jan. 19, 1878), Dr. AUSTIN FLINT recommends a variety of diet rather than the persistent use of the same kind of food prepared in precisely the same way. The articles now used were meat solution, pancreatic emulsion, Liebig's extract of meat with or without milk, milk, eggs, mutton and chicken broths. A pancreatic meat emulsion was mentioned, made as follows: From five to ten ounces of finely chopped meat were added to fully one-third of that weight of the fresh pancreas of the ox, the fat being removed, and mixed with about five ounces of water; the whole was reduced to the consistence of a thick soup.

In cases in which the rectum was or became irritable, one-half of a pint of milk could be carried up into the colon and be retained without difficulty. The average quantity of material to be employed in this mode of treatment was from three to six ounces, and the intervals between the injections might vary in length from three to six hours. Small quantities of some preparation of opium might be added to the injection, if they were not well tolerated. It remained to be settled whether or not opium had the same influence upon rectal as upon gastric digestion—namely, to impair it. Preparatory to the beginning of the treatment, the bowels should be emptied either by means of enemata, or by a laxative given by the mouth. As a substitute for drink, when necessary, simple water may be thrown into the bowel, and the surface of the body freely sponged.

At first nutritive injections might not be retained; but, if persisted in, they would soon be well tolerated. On the other hand, in some cases they were well tolerated at first, but after a time they were not retained. In such cases it was well to stop them for a short time, when they could probably be renewed with success. It was not thought necessary to wash out the rectum each time prior to using the administration of the nutritive injection. The nutritive injection should be *tepid*. Firm pressure should be made over the anus with a sponge or towel, until the desire to remove the injection had passed away. If the nutritive injections met the requirements of the case, there would follow a sense of comfort and satisfaction the same as after taking a meal in the ordinary way.

With reference to irritability of the rectum such as prevented retention of the nutritive injection, even though opium was added, Dr. FORDYCE BARKER had overcome that difficulty by passing the tube high up into the colon, so that the fluid would be thrown into the intestine *above* the rectum.

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Report of the Surgeon General.—The annual report of the Surgeon General of the Army has been published, and the profession will be pleased to learn that

the work of cataloguing the original papers in medical journals and transactions has been completed to date for all this class of literature which the library has been able to obtain; and the classifying these titles under the proper subject headings, and combining them with titles of works, in order to form a complete index to the collection, has been effected to a great extent. Of the value of this work there can be no question, and we hope that every physician will use his influence with Members of Congress to procure the authority for the printing of this catalogue by the Government Printer, which has been asked for.

The second volume of the Medical History of the War of the Rebellion it is expected will be ready for issue by June of this year.

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The Boston Medical and Surgical Journal.—The retirement of Dr. Thomas Dwight from the editorial management of the *Boston Medical and Surgical Journal*, in which he has been associated for the past five years with Dr. J. Collins Warren, is announced. Our Boston contemporary thus speaks of the services he has rendered to it: "The many changes which the Journal has undergone during this, a not uneventful, period in its history, and the favorable results which have followed therefrom, are in no small degree due to his able management and his courageous stand in delicate questions involving professional interests or public welfare, where his power for satire or praise and his ability in argument have forcibly displayed themselves, and have contributed to the increased influence exerted by the Journal upon the community as well as the profession in which it circulates."

In the retirement of Dr. Dwight, medical journalism has lost a valuable coadjutor, and our contemporary an editor whose able pen undoubtedly did much to win for it the high esteem with which it is justly regarded.

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Personal.—Dr. W. R. Whitehead, formerly of New York and recently of Colorado, has removed to Paris, where he is now practising at No. 14 Rue d'Alger.

Obituary Record.—At New York, on the 21st of January, aged sixty-four, Edmund Randolph Peaslee, M. D., LL.D., Professor of Gynæcology in Bellevue Hospital Medical College, President of the American Gynæcological Society, and Surgeon to the New York State Woman's Hospital.

Dr. Peaslee was born at Newton, N. H., in 1814, and graduated in the arts at Dartmouth College in 1836. He took his degree in medicine at Yale in 1840. From that time to the present he has been actively engaged in medical teaching. In addition to his contributions to the pages of the *American Journal of the Medical Sciences*, Dr. Peaslee, in 1857, published a work on Human Histology, and in 1872 an elaborate treatise on Ovarian Tumours and Ovariotomy, which will long remain an authority on the subject of which it treats. Dr. Peaslee was greatly respected for his professional skill, and held in high esteem for his personal worth. He was elected, in 1871, President of the New York Academy of Medicine. He was formerly Professor of Anatomy in the New York Medical College, and Professor of the Diseases of Women in Albany Medical College.

Dr. Peaslee died of pneumonia after a few days' illness.

FOREIGN INTELLIGENCE.

Mr. Spencer Wells and the Samaritan Hospital.—On Dec. 12th Mr. Spencer Wells performed ovariotomy for the 404th time at the Samaritan Hospital. After the operation, he remarked that it was twenty years since he first joined the institution, which was then a dispensary. His first ovariotomy in connection with the institution was done about twenty years ago, and fortunately the first three cases recovered. Had they proved fatal the history of ovariotomy would probably have been different, and the operation might have remained under a cloud. The mortality in each quinquennial period had steadily diminished; it being one in three during the first five years, one in four in the next five, and one in five in the third five years. Still more recently it had been only one

in ten. The total number of deaths among the 404 cases was 99. Other operations than ovariotomy had been done in the hospital; for example, amputation at the hip joint, removal of the lower jaw, and operations for vesico-vaginal fistulæ and ruptured perineum, and these showed that better results were obtained when the same care was bestowed upon them as upon the ovarian cases. The hospital was not perfect, but practically it afforded very good results. Mr. Wells then mentioned that he was now retiring from the active work of the hospital, having been elected consulting surgeon, and that this was probably the last operation he should perform there, unless he operated again next week. But it had been arranged that public consultations should be held at the hospital every Friday; due care being taken to respect the feelings of the patients.—*Lancet*, Dec. 15, 1877.

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Salicylic Acid.—M. Sée informs the correspondent of the *Brit. Med. Journ.* (Dec. 15, 1877), that his success with salicylic acid has been so unexpected and overwhelming in the cure of rheumatism and gout that he has been induced to try it in other analogous complaints, such as arthritis, produced by surgical or other causes, and the results have been identical with those effected in gout and rheumatism; viz., marked amelioration, if not complete cure, in two or three days. He is not prepared to explain the *modus operandi* of salicylic acid in these cases; but believes that, besides being an analgesic, it promotes the absorption, and prevents the reproduction, of morbid products, thus rendering *nil* one of the principal arguments brought against it by its detractors, that it would favour rather than prevent valvular disease of the heart and great vessels The detractors of the new remedy put forward as another argument against it the constant failure they have met with in their practice, to which M. Sée replies that it is not the medicine that is to blame, but the failures are owing most probably to the timidity with which certain practitioners have prescribed it; for, to be effective, it must be administered in sufficiently large doses: four to six *grammes* (sixty to ninety grains) a day of salicylic acid, or eight to ten *grammes* (one hundred and twenty to one hundred and fifty grains) of the salicylate of soda. He gives a decided preference to the latter, as being more soluble and more manageable, and prescribes it largely diluted in the proportion of one-tenth. Sometimes, however, severe gastric symptoms arise; but, in the great majority of cases, they may be put down to the impurity of the salt. Sometimes the salicylate produces other disagreeable symptoms, such as deafness, tinnitus aurium, and a peculiar cerebral disturbance; but these need not alarm the physician, as they soon vanish on a discontinuance of the medicine for a short time. Another accusation brought against it is its toxic action on the system even in moderate doses. Here M. Sée observes that, if pure, the salicylate of soda may be administered to the extent of twenty *grammes* (three hundred grains) a day, without fear of poisoning the patient, as the salt is so quickly eliminated, that it can have no time to accumulate in the system.

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Antiseptic Surgery.—In an interesting clinical lecture on the Treatment of Compound Fractures (*Med. Times and Gaz.*, Nov. 24, 1877), Prof. Richard Volkmann says that during the past four years and a half he has treated conservatively by the antiseptic method seventy-five cases of compound fracture of the extremities occurring in seventy-three patients. "A small proportion of these—eight altogether—had to be subjected to secondary amputation. But neither of those who were treated throughout on conservative principles, nor of those where the conservative treatment failed, and where secondary amputation had to be undertaken, did one single patient die; *they one and all recovered!*

"As I am not the inventor of the 'antiseptic method' of treating wounds—the greatest advance which surgery as a science has ever made—you will not consider it boasting if I venture to call this a very remarkable result; indeed, as compared with our former experience, it is quite an unheard-of result. For the mortality of

such injuries, until the antiseptic method was discovered, was a very high one, no matter what treatment was adopted."

And he again says, "But now, since the introduction of the antiseptic method of treating wounds, I get more successful cases in a single year than I had previously done during the whole of my surgical career."

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Iodoform in Fissure of Anus.—M. Tarnier recommends (*Union Med.*, Dec. 27) the spreading of a small quantity of the powder of iodoform over the surface of a cotton plug, and bringing this in direct contact with the fissure. Four or five dressings suffice in some cases to produce a cure.—*Med. Times and Gaz.*, Jan. 5, 1878.

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Relation between Urinary Secretion and Irritation of Spermatic Plexuses.—M. Nepveu read a paper at the Havre meeting of the French Association for the Advancement of Sciences, in which he gave the results of his continued researches on the variations which the urinary secretion may undergo as a consequence of various traumatisms. He has arrived at the conclusion that the testis may, in certain abnormal conditions (such, for example, as follow injections of iodine into the tunica vaginalis, and in neurosis of the testis), be the starting point of reflex actions affecting the urinary secretion. This reflex action, looked at especially as a result of injections of iodine into the tunica vaginalis for hydrocele, is exhibited by a series of oscillations in the secretion, the first effect being oliguria or deficient secretion, which lasts for some days, and is followed by polyuria, succeeded by a return to the normal condition. This result of the injection of iodized solutions into the tunica vaginalis may be regarded, M. Nepveu thinks, as an experiment which establishes the reality of a physiological connection bebetween the renal secretion and irritation affecting the spermatic plexuses.—*Lancet*, Oct. 6, 1877.

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Pneumonomycosis Sarcinica. — Under this name, M Heimer describes in the *Deutsches Archiv für Klin. Med.*, vol. xix., a case of which the following is an abstract. A servant-man, aged 57, admitted into hospital with symptoms of an advanced stage of pulmonary phthisis, was seized on the eighth day with pneumonia of the right lung. The sputa contained fibrinous coagula, pus-cells, granular cells, epithelium, fat, numerous molecules, and a large number of sarcinæ. At the necropsy, there were found thickening, excavation, and caseation of both upper lobes; and the two lower lobes of the right lung were hepatized. In the anterior part of the middle lobe of the right lung was a cyst filled with gas and a little fluid. The gas had no bad smell, and the fluid had an acid reaction. The cavity was about four inches and three-quarters in circumference, and was bounded by the broken-down lung-tissue, which contained a large proportion of sarcinæ. The sarciuæ were colourless, and were found also in the pus-corpuscles. Two similar cases have been described by Virchow, and one by Cohnheim; all occurred in phthisical patients. Heimer believes that his patient took in the sarcinæ by inspiration while in hospital; that, through their very rapid development, they caused localized softening in the lung; and this gave rise to the fatal pneumonia.—*British Medical Journ.*, Nov. 24, 1877.

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Atmospheric Germs.—At the meeting of the Royal Society, on November 29th, a discussion took place on the subject of Professor Tyndall's well-known discoveries as to the influence of the invisible particles of the atmosphere, as exciters of putrefaction. Professor Tyndall has established by his experiments the following remarkable facts: 1. That the air is at all times, even when free from microscopically visible particles, beset with much smaller ultramicroscopical particles which communicate to it, when illuminated by the sunbeam or the beam of the electric light, a peculiar opalescence; 2. That this opalescence disappears when the air is allowed to remain absolutely tranquil; 3. That air which has undergone this change, *i. e.*, air from which the ultramicroscopical particles have sub-

sided, is no longer capable of contaminating liquids. From these facts, Dr. Tyndall concludes that the particles in question are organisms—the germs of septic bacteria. Dr. Burdon Sanderson, admitting the fact that the particles have the influence assigned to them, regards the evidence that they are organisms as insufficient; holding that, in respect of morphological entities, the only evidence that can be taken is that of observation. The present discussion has arisen out of a paper communicated to the Royal Society last summer, entitled, "Note on Dr. Burdon Sanderson's Latest Views of Ferments and Germs," in which Dr. Tyndall criticized certain parts of a lecture delivered in January last on *Contagium Vivum*. In this paper, after referring to certain writers who, he thinks, have wrongly invoked the microscope in deciding the question of ultimate structure, Dr Tyndall proceeds: "It is not without concern that I see the habit of thought and expression against which I thus reasoned revived by so excellent a worker as Dr. Sanderson. My position is, and I think the uniformity of nature is on my side, that a particle, whether great or small, which, when sown, produces a plant, is proved thereby to be the germ of that plant; Dr. Sanderson's position is, that a particle, however fruitful it may be, ceases to be a germ, and dwindles to a molecular aggregate when it becomes ultramicroscopical. It may be fairly asked, Have all microscopes, or only some, the right to define the germ-limit? Has a pocket-lens the right? If not, and assuredly it has not, what power of enlargement confers the right?" etc. In the introduction to his paper, Dr. Sanderson remarks that the difference between himself and Professor Tyndall appears to him to arise mainly from the difference of meaning attached to the words germ and structure.—*British Med. Journ.*, Dec. 8, 1877.

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Death from Chloroform.—A case of this which occurred at Ancaster, Ont., is reported in the *Canada Lancet* for Jan. 1878. Fatty degeneration of the heart was disclosed at the *post mortem*.

Handy Antidotes.—The French medical profession have frequently occupied themselves with the endeavour to add to their pharmacopœia an antidote which would answer the purpose in the majority of accidental poisonings, and which could always be kept at hand, so that it might be administered at once, before more special indications had the time to develop themselves, either according to information and anamnestics, which are often wanting in cases of accident, or, according to symptoms noted by observation of the patient. M. Mialhe has highly recommended, for this purpose, hydrated sulphate of iron mixed with calcined magnesia. This is a good antidote for the metallic salts, which it deoxidizes and changes into harmless sulphurets. But this antidote has the disadvantage of disengaging sulphydric acid in the presence of acids. It requires great nicety in preparation, and is difficult to keep. M. Dorvault has proposed, in cases of alkaloid, cyanic, and metallic poisonings, an antidote composed of equal parts of calcined magnesia, peroxide of iron, and washed powder of animal charcoal. This mixture also, however, changes if it be kept some time. M. Jeannel proposed to keep separately—1, a solution of sulphate of iron; and 2, a mixture of 80 *grammes* of calcined magnesia and 40 *grammes* of animal charcoal in 800 *grammes* of distilled water. This mixture, added at the moment of using to the solution No. 1, forms the antidote, which is to be administered in successive doses of from 50 to 100 *grammes* (about $1\frac{3}{4}$ to $3\frac{1}{2}$ ounces). This antidote renders preparations of arsenic, zinc, and digitalis insoluble. It completely saturates free acid, and only acts partially on the alkaline hypochlorites and the oxide of copper. It also leaves in solution a small amount of morphia and strychnia, and the oxide of mercury in notable quantity. Professor Ranieri Bellini has made a communication to the Medico-Physical Society of Florence on the iodide of starch, which MM. Bouchardat and Quesneville were the first to introduce into therapeutics, and frequently employed in cases which required an active alterative medication, when the stomach refused to tole-

rate iodine in any other form. The iodide of starch is a chemical antidote which is specially appropriate to poisoning by sulphur, by the alkaline or earthy sulphurets, by caustic alkalies, ammonia, or any of the alkaloids. It is also an eliminating agent, very useful in the treatmeut of long-standing metallic poisonings, especially those resulting from lead or mercury. Dr. Bellini advises that the patient should always be made to vomit soon after the administration of the antidote, to rid him of the chemical products which result from the decomposition of the toxic agent, which in their turn might likewise become decomposed.—*British Med. Journal*, Dec. 22, 1877.

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Iodized Cod-Liver Oil.—Pale cod-liver oil (*Med. Times and Gaz.*, Dec. 15, 1877), one hundred grammes; iodoforiu, one-quarter of a gramme; oil of anise, ten drops. The iodoform removes from this oil its nauseous and disagreeable odour. M. Fonssagrives prescribes this mixture in the same manner as ordinary cod-liver oil, in cases in which it is desired to combine iodine with it.—*L'Union Médicale*, Dec. 6, 1877.

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Health of Grocers and Drapers.—The *Sanitary Record* says: "Recent statistics show that the rate of mortality among grocers is as 76 to 100 among the geueral populatiou at equal ages, while the death-rate among drapers is as 108 to 100 by the same staudard. On analyzing the cause of this difference between the drapers and the grocers, it is found that it lies in the mode of living. The principal disease which destroys the draper is pulmonary consumption. The explanation is simple: The grocer lives in a shop, the door of which is open the whole day, and he is very active himself in business; the draper, ou the other hand, lives in a close place, with the doors of his shop closed, and in a dusty and close atmosphere. No one, whose pleasure or business calls on him to enter the majority of our large drapery emporiums in London, but will feel in a position to testify to the truth of this description. The heat and closeness which are their usual characteristics sufficiently account for the general pallor and unhealthy appearance of the male and female attendants in them."—*Med. Times and Gaz.*, Dec. 15, 1877.

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Poisonous Wall-papers.—A lecture on "Poisonous Wall-papers" was delivered a short time back before the Manchester Chemists and Druggists' Association by Mr. L. Siebold. The lecturer stated that out of sixty or seventy papers of various colours, blue, red, brown, pink, etc., analyzed by him, teu only were harmless, the rest contaiuing arsenic. There is a popular impressiou that green papers only are to be feared; but the result of Mr. Siebold's examination should have the effect of renderiug householders and heads of families suspicious of some of the most iuuocent-looking colours. It is reasonable to assume that to the presence of deleterious ingredients coutained in certain wall-papers may be ascribed many little illnesses of children where no apparent cause exists for the same, and which sometimes puzzle the medical attendant. —*Lancet*, Dec. 29, 1877.

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Obituary Record.—At Bordeaux, in December last, aged 86 years, M. Elie Gintrac, formerly Professor in, and Director of the School of Medicine at Bordeaux.

M. Giutrac was the author of a number of papers ou diseases of the chest, but his most important work is his *Theoretical and Clinical Course on Pathology and Medical Therapeutics*, of which eight volumes have been published. It is characterized by erudition, good sense, and great cliuical wealth.

——— At Paris, on the 3d of December, aged 72, Jean-Bapt.-Philip. Barth, Commander of the Legiou of Houour, late President of the Académie de Médecine, and Honourary Physician to the Hôtel Dieu.

M. Barth succumbed to an attack of pernicious fever contracted at Rome. *The Traité d'Auscultation*, which he wrote in coujunction with M. Henri Roger, was his principal work, and has achieved for him a well-deserved reputation.

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We heartily commend his book to the medical student as an honest and intelligent guide through the mazes of therapeutics, and assure the practitioner who has grown gray in the harness that he will derive pleasure and instruction from its perusal.—*Bost. Med. and Surg. Journ.*, March 8, 1877.

We could quote much that would interest our readers; but we desist, referring all to the volume itself as at once practical and scientific; as a treatise for the practitioner simply bent on learning the latest discoveries in therapeutics, and for the inquirer in search of the philosophy of medical practice.—*American Practitioner*, Sept. 1877.

HENRY C. LEA, PHILADELPHIA.